

CLAIMS

What is claimed is:

1. A rotary cam assembly comprising:
a rotary cam movable between a bending and a released position;
a first actuator for moving said rotary cam between said bending position and said released position;
a failsafe device for ensuring proper position of said rotary cam, said failsafe element comprising a rotatable element supported between first and second arms, and an actuator applying force directly to said rotatable element for moving said rotary cam to a desired position.
2. The assembly as recited in claim 1, wherein said actuator comprises a cam surface engageable with said rotatable member.
3. The assembly as recited in claim 1, wherein said second actuator comprises a hydraulic cylinder.
4. The assembly as recited in claim 1, wherein said second actuator comprises a pneumatic cylinder.
5. The assembly as recited in claim 1, wherein said second actuator comprises a gas cylinder.

6. The assembly as recited in claim 1, wherein said rotatable element comprises a roller supported on a shaft, said shaft supported at distal ends by said first and second arms.

7. The assembly as recited in claim 6, wherein said rotatable element comprises a ball.

8. The assembly as recited in claim 6, wherein said rotatable element comprises a block with a heel surface for engaging said second actuator.

9. The assembly as recited in claim 1, wherein said first and second arms comprise a radial surface supported on a corresponding radial support, said first and second arms rotatable on said radial support for moving said rotary cam to said desired position.

10. The assembly as recited in claim 9, wherein said first and second arms comprise corresponding slots and said rotatable element is supported on a pivot pin movable within said slots.

11. The assembly as recited in claim 10, wherein said rotatable element comprises a block rotatable about said pivot pin, and a guide channel for guiding said block.

12. The assembly as recited in claim 11, wherein said block comprises guide balls guiding within said guide channel.

13. A rotary cam assembly comprising:
 - a rotary cam movable between bending and released positions;
 - a first actuator for moving said rotary cam between bending and engaged positions; and
 - a second actuator biasing said rotary cam toward said engaged position for ensuring said rotary cam moves to said engaged position regardless of a condition of said first actuator.
14. The assembly of claim 13, comprising first and second arms attached for rotation with said cam, and a rotatable element supported between said first and second arms.
15. The assembly of claim 13, wherein said second actuator applies a biasing force directly to said rotatable element.
16. The assembly of claim 13, comprising a pivot pin supporting said rotatable element between said actuator and said first and second arms.
17. The assembly of claim 16, wherein said first and second arms comprise corresponding slots and said pivot pin is movable within said slots.
18. The assembly of claim 17, comprising a guide block attached to said rotatable element to maintain a desired orientation to said second actuator.

19. The assembly of claim 18, wherein said guide block comprises guide balls moving within guide slots.

20. The assembly of claim 17, wherein said first and second arms include a radial bearing surface on which said first and second arms rotate for moving said cam to said engaged position.

21. The assembly of claim 15, wherein said second actuator comprises a gas spring.